



Attorney Docket #20153
Serial #09/290,777

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

David Stutsman

Serial No. 09/290,777

Filed April 13, 1999

For SPINDLE ASSEMBLY FOR MACHINE
TOOLS AND METHOD OF MAKING SAME

Examiner Erica E. Cadugan

Art Unit 3722

REPLY BRIEF UNDER 37 CFR §1.193

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Peter N. Lalos
Reg. No. 19,789
LALOS & KEEGAN
1146 Nineteenth Street, N.W. 5th Floor
Washington DC 20036-3723
Telephone (202) 887-5555
Telecopier (202) 296-1682

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Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Commissioner:

This is an appeal brief respectfully submitted to appeal the final decision of the Office Action mailed on June 19, 2001. A notice of Appeal accompanied with the requisite fee was filed on August 20, 2001. The Appeal Brief along with the requisite fee was subsequently filed on October 19, 2001, to which the Examiner answered on January 10, 2002.

The Commissioner is hereby authorized to charge any underpayment of fees or credit any overpayment of fees in connection with this communication to Deposit Account 12-0429.

(2) Response to Examiner's Answer

Group I

The Examiner rejected Applicant's assembly claims as being an obvious modification of Nenninger in view of the Machinery's Handbook. The Examiner has asserted that the bearing seat and sleeve in Nenninger and the comparable structure of Applicant's invention perform the same function and have similar structure. Furthermore, the Examiner has asserted that replacing a screw with a bonding agent provides an obvious modification of Nenninger to arrive at Applicant's invention. Applicant submits that such a combination does not teach Applicant's invention "as a whole" nor does it teach specific limitations.

In arriving at the rejection, the Examiner has unreasonably broadened the interpretation of "bearing seat" and "sleeve" in Applicant's claims to encompass the disclosures of Nenninger and the Machinery's Handbook. *See In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983) (claims are not read in a vacuum, and limitations therein must be interpreted in light of the specification in giving them their broadest reasonable interpretation).

The Examiner broadened the definition of "bearing seat" to include the cylindrical aperture for holding all of the components as disclosed in Nenninger. Applicant has disclosed the bearing seat in the claims, specification and drawings as part of a recess in the housing, i.e. "a housing defining a bearing seat." (See Specification page 4, line 20 through page 5, line 15 and Figures 1-4, items 14 and 15). *See In re Vogel*, 164 USPQ 619, 622 (CCPA 1970) (the specification can be used to interpret claim language when the specification provides definitions of terms appearing in the claims). Furthermore, one having ordinary skill in the art would know a bearing seat provides a location for positioning the bearing and restricting the lateral movement of the bearing from the seat. The aperture in Nenninger that the Examiner construes as the

bearing seat performs none of these functions, rather it is simply a hole bored through the housing. The portion of Nenninger which defines the bearing seat (Nenninger, Figure 5, item 73) is the "sleeve" (Nenninger, Figure 5, item 70), not the housing. Such is even stated in Nenninger in page 2, column 2, lines 117-118, "this sleeve has an enlarged bore ... to receive the bearing unit."

Applicant's invention further discloses a sleeve disposed between a bearing disposed in a bearing seat and the bearing seat (See Drawings, Figure 2, items 17 and 20). The sleeve becomes the effective bearing seat once the bonding agent has set to provide axial alignment of the spindle and bearings. As defined in the specification, the sleeve is of a cylindrical shape (See Specification page 5, lines 5-15 and Figures 1-4, items 17 and 20). Furthermore, a sleeve is defined as a tubular part designed to fit over another part. Merriam-Webster's Collegiate Dictionary, definition of sleeve, page 1100 (10th ed. 2000). Applicant submits the "sleeve" as used in Nenninger and that used by the Examiner is inconsistent with the definition of sleeve in light of the accepted definition and that disclosed in Applicant's specification. The sleeve as disclosed by Nenninger and used by the Examiner is an insert having a complex structure for providing a bearing seat and providing oil reserves to the spindle. It is not of a tubular shape, nor does it fit into a bearing seat between the bearing and the bearing seat. Rather, it is designed to contain the bearing seat and provide oil to the spindle.

By joining these definitions of bearing seat and sleeve together, the Examiner has attempted to expand the disclosure of Nenninger as modified by the Machinery's Handbook to render Applicant's invention obvious. However, such definitions are inappropriate in light of the definitions provided in the specification and drawings. Therefore, since Nenninger as modified by the Machinery's Handbook does not result in a housing defining a bearing seat, a bearing in

the bearing seat and a sleeve disposed between the bearing and the housing, as interpreted in light of the specification, Applicant's invention is not rendered obvious.

Group II

The Examiner also has rejected Applicant's method as being obvious over Nenninger in view of The Machinery's Handbook. The assumed basis for this rejection is that the spindle assembly of Nenninger as modified by the Machinery's Handbook would be a product made by the Applicant's method. However, Applicant submits that the method claimed will not produce a structure resulting from the allegedly obvious combination of Nenninger and the Machinery's Handbook because the method as a whole is not disclosed and the method is not possible using the assembly disclosed by Nenninger.

Neither Nenninger nor the Machinery's Handbook teach a step of forming a bearing seat in a housing. As stated above, the Examiner has broadened the definition of bearing seat to include the cylindrical aperture for holding all of the components as disclosed in Nenninger. Applicant has disclosed the bearing seat in the claims, specification and drawings as part of a machined recess in the housing, i.e., "forming at least one bearing seat in a housing." One having ordinary skill in the art would know a bearing seat provides a location to install the bearing and restrict the lateral movement of the bearing relative to the housing. The aperture in Nenninger that the Examiner refers to as the bearing seat performs none of these functions, rather it is simply a hole bored through the housing. The portion of Nenninger which defines the bearing seat (Nenninger, Figure 5, item 73) is the "sleeve" (Nenninger, Figure 5, item 70), not the housing. Such is even stated in Nenninger in page 2, column 2, lines 117-118, "this sleeve has an enlarged bore ... to receive the bearing unit." Thus, to accomplish the step of forming a

bearing seat in the housing of Nenninger, the bearing seat is necessarily formed in the sleeve of Nenninger (Nenninger Figure 5, item 70).

Further, a proposed modification cannot change the principal operation of the reference. *See In re Ratti*, 123 U.S.P.Q. 349 (CCPA 1959). The assembly of Nenninger to which the Examiner relies cannot be made by Applicant's method. The necessary method to which Nenninger is assembled is by inserting the spindle from a right side of Figure 5 because as shown in Figure 2, gear drive 40 would not fit through aperture 71. Further, the sleeve necessarily must be inserted from the left side in Figure 5 because of a tabular portion on the upper side of the sleeve which is wider than the diameter of aperture 71, thus requiring the sleeve to enter from one direction which is from the left. Such tabular portion appears to work in conjunction with the stud screw to secure the sleeve into position. Thus, an assembly of the spindle in Nenninger would necessarily require insertion of the spindle from one side and the sleeve from the other. Applicant's invention discloses mounting a spindle onto one race of a bearing, mounting a sleeve onto the other race of the bearing, placing a bonding material onto another surface of the sleeve and inserting all of this as one piece into the housing so the sleeve is adjacent to the bearing seat.

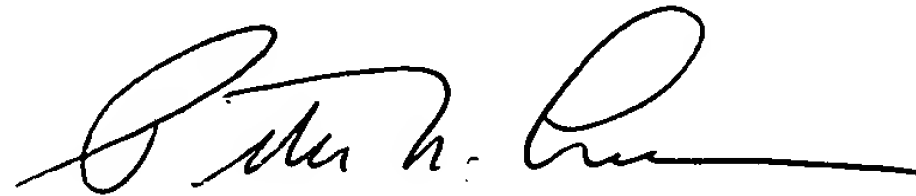
Additionally, all claim limitations must be taught or suggested in the prior art. *See In re Royka*, 180 U.S.P.Q. 580 (CCPA 1974). The Examiner stated the bearing seat "appears to be slightly oversized" in the rejection of the claims 12 and 13 by simply looking at Figure 5 of Nenninger. Examiner Answer page 3, lines 21-22. Applicant submits that nowhere in Nenninger or the Machinery's Handbook is there a suggestion or a disclosure of anything oversized, especially the bearing seat. Applicant simply does not understand how Figure 5 of the drawings provides a basis for this observation. One having ordinary skill in the art would know that to

reduce vibration and to assure proper alignment of the spindle, the aperture and the "sleeve" 70 fitting therein in the spindle assembly in Nenninger would have to be precision machined to assure a proper fit to prevent such vibration and maintain a proper alignment.

(3) Conclusion

In accordance with the above reasons and those stated in the Appeal Brief, Applicant requests the rejections of the claims be reversed and the application passed to issuance.

Respectfully submitted,



Peter N. Lalos
Reg. No. 19,789
LALOS & KEEGAN
1146 Nineteenth Street, N.W. 5th Floor
Washington DC 20036-3723
Telephone (202) 887-5555
Facsimile (202) 296-1682

February 11, 2002

(10) Appendix Authority

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